APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,380	10/20/2003	Mark Beaumont	DB001072-000	3361

57694	7590	08/31/2006

JONES DAY
500 GRANT STREET
SUITE 3100
PITTSBURGH, PA 15219-2502

EXAMINER
JOHNSON, BRIAN P

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	10/689,380	BEAUMONT, MARK
Office Action Summary	Examiner	Art Unit	
	Brian P. Johnson	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>19 June 2006</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 June 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-26 are pending.

Papers Filed

2.   Examiner acknowledges receipt of amendment and remarks filed on 19 June

2006.

Title

3.   The new title has been accepted. Objection is withdrawn.

Drawings

4.   Objections with regard to figures 1, 2, 5, 6A-10B are withdrawn.

5.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show

every feature of the invention specified in the claims. Therefore, generating and the

initial count, current count, target count comparisons, incrementing/decrementing the

current count, shifting data in the positive and negative "z" direction (from claim 7), and

shifting data diagonally (from claims 15 and 19) must be shown or the feature(s)

canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Note that a previous rejection with regards to the drawings is maintained due to

the addition of new matter in the figure submitted to rectify this problem. See below.

The amendment filed 19 June, 2006 is objected to under 35 U.S.C. 132(a)

because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no

amendment shall introduce new matter into the disclosure of the invention. The added

material which is not supported by the original disclosure is as follows:

It appears that each of the elements to which a reference is made are included in

the originally filed specification; however, the interactions between those references do

not appear to be fully disclosed in the specification as originally filed. For example,

paragraph [0066] now states, "at certain points in the shifting process, the counter is

decremented (130)"; however, figure 15 gives further detail as to when exactly the

counter is decremented with regards to the questions, "DATA LOADED?" and

"COUNTER <= 0?". If Applicant does not believe that figure 15 contains new matter,

Applicant is encouraged to show the position in the specification that gives basis for

each unlabeled element and each interactive arrow.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

6.   The objection to claim 9 has been withdrawn.

7.   Claims are objected to because of the following informalities:

Claim 1: in line 5, "the processing element" lacks clear antecedent basis. Note

that certain processing elements with different limitations are mentioned within claim 1.

It appears that "the processing element" is referring to one of the "at least certain of said

processing elements maintaining a count"; however, this link is not clear within the

wording.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Rejection with regards to claim 13 has been withdrawn.

Claim Rejections - 35 USC § 101

9.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The rejection with regards to claim 26 has been withdrawn.

Claim Rejections - 35 USC § 102

10.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this Office

action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11.   Claims 1-2, 5-11, 15-16, and 19-26 are rejected under 35 U.S.C. 102(b) as being

anticipated by Taylor (U.S. Patent No. 4,992,933).

12.   As per claim 1, Taylor teaches a method of controlling a plurality of processing

elements, comprising: at least certain of said processing elements (Fig. 1 array

controller 14) maintaining a count, each count being responsive to a processing

element's location; and for each processing element maintaining a count, storing data in

response to its count. *The examiner asserts that the array controller 14 constitutes a*

processing element, as it controls processing in the array. Array controller 14 inherently

maintains a count to ensure that the proper number of shifts take place to achieve the

desired results. For instance, for the array to accomplish the data reflection (col. 9-10)

the controller must issue 1+n/2 shift instructions (col. 10 line 18). The examiner further

asserts that data is stored in response the count: when the final shift has occurred (as

detected by the count) the array elements retain the data of the final shift.

Taylor also discloses storing data in the processing element in response to that

processing element's count (col 4 lines 67-col 4 line 28).

Note that the array controller, as shown in fig. 2, contains many memory

locations used for instructions regarding the remaining array elements. For example,

"An ALU 38 and register bank 40 are used in the generation of array memory

addresses, loop counting, jump address calculations and miscellaneous general

purpose register operations" and "data from the host which is to be written into the array

processors to be rapidly down-loaded into the array controller". Examiner asserts that

instructions must be executed sequentially (or, with finite parallelism). This means that

these various instructions must wait for the shifting algorithms to complete to be able to

utilize all the instruction data listed. Consequently, the controller memory must wait for

the, for example, 1+n/2 processing cycles (or, more particularly, the processing

element's counter) to update the instruction data—this updating, clearly, requiring

storing data in memory. By this description, it is clear that Taylor discloses "storing data

in the processing element (the array controller) in response to that processing element's

count."

13.   As per claim 2, Taylor teaches the method of claim 1 wherein said maintaining a

count includes setting a counter to a first known value and altering the count at

programmable intervals by a programmable amount, said storing occurring when a

current count equals a target value. *The examiner asserts that in order to maintain a*

count, it must inherently be set to an initial value. Further, the examiner asserts that

updating said count is inherent, as a count is useless unless it is updated on each

iteration of the function it is counting. Data is stored in response the count: when the

final shift has occurred (as detected by the count) the array elements retain the data of

the final shift.

14.   As per claim 5, Taylor teaches a method of controlling the data selected as

output data by a plurality of processing elements, comprising:

        issuing an instruction set to said plurality of processing elements, said instruction

set being performed through a series of data shifts; (Col. 2 lines 42-48)

        maintaining a count responsive to said data shifts within at least certain of said

processing elements; *The examiner asserts that a count must inherently be maintained*

to execute the shift loop a predetermined number of times. If a count were not

maintained, there would be no way to ensure the proper number of data shifts.

        and selecting data based on said counts. *The examiner asserts that data is*

selected when the final shift has occurred.

15.   As per claim 6, Taylor teaches the method of claim 5 wherein said instruction set

includes one of an edge shift, planer shift, wrap shift and vector shift or a combination

thereof. *Figure 7b discloses a wrap shift.*

16.   As per claim 7, Taylor teaches the method of claim 5 wherein said data shifts

include shifting data in one of a north, south, east and west, plus z and minus z

directions. *Figure 7b discloses shifting in the west direction.*

17.   As per claim 8, Taylor teaches a method of controlling the position of data in a

plurality of processing elements, comprising:

        shifting data within the plurality of processing elements along one of a row,

column or diagonal; *The examiner asserts that data is shifted along rows in fig. 7b.*

        and each active processing element selecting data as a final output in response

to that processing element's location within the plurality of processing elements. *The*

examiner asserts that final data is selected after the final shift has occurred. Each

element maintains the data it has just received, based on its location in the array.

18.   As per claim 9, Taylor teaches the method of claim 8 additionally comprising

loading an initial count into at least certain of said plurality of processing elements and

calculating an initial count locally based on the processing element's location in the

plurality and the function being performed on the data. *The examiner asserts that the*

array controller 14 constitutes a processing element, as it controls processing in the

array. Array controller 14 inherently maintains a count to ensure that the proper number of shifts take place to achieve the desired results. For instance, for the array to accomplish the data reflection (col. 9-10) the controller must issue 1+n/2 shift instructions (col. 10 line 18).

19.   As per claim 10, Taylor teaches the method of claim 9 additionally comprising maintaining a current count in at least certain of said plurality of processing elements, said current count being responsive to said initial count and the number of data shifts performed, said selecting being responsive to said current count. *The examiner asserts that a current count is inherent to the loop control of Taylor's system. If a count were never updated on each iteration of the loop, the count would never increment or decrement, and the loop would never exit. The examiner further asserts that data is stored in response the count: when the final shift has occurred (as detected by the count) the array elements retain the data of the final shift.*

20.   As per claim 11, Taylor teaches the method of claim 10 wherein said initial count is modified by a programmable amount at programmable intervals to produce said current count. *The examiner asserts that Taylor's system is programmed to operate as disclosed. It is inherent that the count is programmed to update as per the requirements of the system.*

21.   As per claim 15, Taylor teaches the method of claim 8 wherein said shifting

includes shifting data north to south, south to north, east to west, west to east, northeast

to southwest, southwest to northeast, northwest to southeast and southeast to

northwest.   *The examiner asserts that all these shift directions take place in the shift*

mapped in Fig. 7a. Diagonal shifts are accomplished by means of two shifts consisting

of a vertical and a horizontal shift.

22.   As per claim 16, Taylor teaches a method for controlling the position of data in a

matrix of processing elements, comprising:

shifting data within the matrix of processing elements; *Fig. 7a and 7b illustrate*

shifting data in the matrix.

maintaining a current count in each active processing element responsive to the

number of data shifts; *The examiner asserts that the array controller 14 constitutes a*

processing element, as it controls processing in the array. Array controller 14 inherently

maintains a count to ensure that the proper number of shifts take place to achieve the

desired results. For instance, for the array to accomplish the data reflection (col. 9-10)

the controller must issue 1+n/2 shift instructions (col. 10 line 18). The examiner asserts

that the array controller constitutes an active processing element, as it keeps track of

the count data for the entire array.

and selecting output data as a function of said current count. *The examiner*

further asserts that data is stored in response the count: when the final shift has

occurred (as detected by the count) the array elements retain the data of the final shift.

23.   As per claim 19, Taylor teaches the method of claim 16 wherein said shifting

includes the north to south and south to north shifting of columns, the east to west and

west to east shifting of rows, and the northeast to southwest, southwest to northeast,

northwest to southeast and southeast to northwest shifting of diagonals. *The examiner*

asserts that all these shift directions take place in the shift mapped in Fig. 7a. Diagonal

shifts are accomplished by means of two shifts consisting of a vertical and a horizontal

shift.

24.   As per claim 20, Taylor teaches a method, comprising: shifting data within a

plurality of processing elements; and each active processing element selecting data as

a final output in accordance with the formula f(x_Index, y_Index, z_Index) where f is

dependent upon the desired output.   *The examiner asserts that the shifts outlined in*

Fig. 7a and 7b constitute data being shifted within a plurality of processing elements.

The examiner further asserts that data is stored in response to the elements' locations:

when the final shift has occurred (as detected by the count) the array elements retain

the data of the final shift, dependent on their location in the shift scheme.

25.   As per claim 21, Taylor teaches the method of claim 20 additionally comprising

one of loading an initial count into each processing element and calculating an initial

count locally based on the processing element's location and the function f. *The*

examiner asserts that a count must inherently be maintained to execute the shift loop a

predetermined number of times. If a count were not maintained, there would be no way

to ensure the proper number of data shifts.

26.   As per claim 22, Taylor teaches the method of claim 21 additionally comprising

maintaining a current count in each processing element, said current count being

responsive to said initial count and the number of data shifts performed, said selecting

being responsive to said current count. *The examiner asserts that a current count is*

inherent to the loop control of Taylor's system. If a count were never updated on each

iteration of the loop, the count would never increment or decrement, and the loop would

never exit. The examiner further asserts that data is stored in response the count:

when the final shift has occurred (as detected by the count) the array elements retain

the data of the final shift.

27.   As per claim 23, Taylor teaches a method, comprising: shifting data within a

plurality of processing elements; and each active processing element selecting data as

a final output in accordance with the formula f (d(0), d(1), d(2) . . . d(n-1)) where f is

dependent upon the desired output. *The examiner asserts that the shifts outlined in Fig.*

7a and 7b constitute data being shifted within a plurality of processing elements. The

examiner further asserts that data is stored in response to the desired output: when the

final shift has occurred (as detected by the count) the array elements retain the data of

the final shift, dependent on their location in the shift scheme.

28.   As per claim 24, Taylor teaches the method of claim 23 additionally comprising one of loading an initial count into each processing element and calculating an initial count locally based on the processing element's location and the function f. *The examiner asserts that a count must inherently be maintained to execute the shift loop a predetermined number of times. If a count were not maintained, there would be no way to ensure the proper number of data shifts.*

29.   As per claim 25, Taylor teaches the method of claim 24 additionally comprising maintaining a current count in each processing element, said current count being responsive to said initial count and the number of data shifts performed, said selecting being responsive to said current count. *The examiner asserts that in order to maintain a count, it must inherently be set to an initial value. Further, the examiner asserts that updating said count is inherent, as a count is useless unless it is updated on each iteration of the function it is counting. Data is stored in response the count: when the final shift has occurred (as detected by the count) the array elements retain the data of the final shift.*

30.   As per claim 26, Taylor teaches a memory device carrying a set of instructions which, when executed, perform a method comprising: maintaining a count in at least certain of said processing elements, each count being responsive to a processing element's location; and for each processing element maintaining a count; storing data in response to its count. *The examiner asserts that the array controller 14 constitutes a*

processing element, as it controls processing in the array. Array controller 14 inherently

maintains a count to ensure that the proper number of shifts take place to achieve the

desired results. For instance, for the array to accomplish the data reflection (col. 9-10)

the controller must issue 1+n/2 shift instructions (col. 10 line 18). The examiner further

asserts that data is stored in response the count: when the final shift has occurred (as

detected by the count) the array elements retain the data of the final shift.

Claim Rejections - 35 USC § 103

31.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

32.   Claims 3, 4, 12-14, and 17-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Taylor.

33.   As per claim 3, Taylor teaches the method of claim 1 but fails to disclose wherein

said maintaining a count includes setting a counter to an initial value, and counting

down from said initial value, said storing occurring when a current count is non-positive.

34.   Official Notice is taken that counting down from an initial value is well known in

the art. Counting down from an initial value to zero to determine the number of

iterations of a loop provides the benefit of not having to store a comparison value

separate from zero. Without having to store the additional value, less hardware is necessary.

35.   It would have been obvious to one of ordinary skill in the art at the time of invention to have implemented the loop count of the array controller by decrementing from an initial value to zero for the benefit of not having to store a comparison value with additional logic.

36.   As per claim 4, Taylor teaches the method of claim 1 but fails to teach wherein

said maintaining a count includes setting a counter to a first known value, and counting

up from said first known value, said storing occurring when a current count equals a

target count.

37.   Official Notice is taken that incrementing a counter and comparing it to a stored

comparison value is well known in the art.

38.   Incrementing a local count provides a simple implementation to ensure a function

is performed a correct number of times, ensuring proper operation of the processor.

39.   It would have been obvious to one of ordinary skill in the art at the time of

invention to have incremented a count in Taylor's processor until it matched a stored

value required by the NEWS setting to ensure the proper number of shifts was

performed.

40.   As per claim 12, Taylor teaches the method of claim 11 but fails to disclose

wherein said modification includes one of incrementing and decrementing said initial

count.

41.   Official Notice is taken that counting down from an initial value is well known in

the art. Counting down from an initial value to zero to determine the number of

iterations of a loop provides the benefit of not having to store a comparison value

separate from zero. Without having to store the additional value, less hardware is

necessary.

42.   It would have been obvious to one of ordinary skill in the art at the time of

invention to have implemented the loop count of the array controller by decrementing

from an initial value to zero for the benefit of not having to store a comparison value with

additional logic.

43.   As per claim 13, Taylor teaches the method of claim 12 wherein said selecting

occurs when said current count is non-positive.   *The examiner asserts that zero is a*

non-positive value.

44.   As per claim 14, Taylor teaches the method of claim 12 wherein said selecting

occurs when said current count equals a target value.   *The examiner asserts that zero*

constitutes a target value.

45.   As per claim 17, Taylor teaches the method of claim 16 but fails to teach wherein

said current count is incremented in response to said data shifts and said selecting

occurs when a target value is reached.

46.   Official Notice is taken that incrementing a counter and comparing it to a stored

comparison value is well known in the art.

47.   Incrementing a local count provides a simple implementation to ensure a function

is performed a correct number of times, ensuring proper operation of the processor.

48.   It would have been obvious to one of ordinary skill in the art at the time of

invention to have incremented a count in Taylor's processor until it matched a stored

value required by the NEWS setting to ensure the proper number of shifts was

performed.

49.   As per claim 18, Taylor teaches the method of claim 16 wherein said current

count is decremented from an initial count and said selecting occurs when said current

count reaches a non-positive value.

50.   Official Notice is taken that counting down from an initial value is well known in

the art. Counting down from an initial value to zero to determine the number of

iterations of a loop provides the benefit of not having to store a comparison value

separate from zero. Without having to store the additional value, less hardware is

necessary.

51.   It would have been obvious to one of ordinary skill in the art at the time of

invention to have implemented the loop count of the array controller by decrementing

from an initial value to zero for the benefit of not having to store a comparison value with

additional logic.

Response to Arguments

1.

2.   Applicant's arguments filed June 19th, 2006 have been fully considered but they

are not persuasive.

3.   Applicant states:

"As set fort in paragraph 14 of the Office action, 'the examiner asserts that the

array controller 14 constitutes a processing element, as it controls processing in the

array.' It is respectfully submitted that the examiner is not free to re-label the

components of Taylor. Taylor discloses an array 12 of processing elements T(ij). The

array controller 14 is a separate element, distinct from the array of processing elements.

Accordingly, Taylor was well aware of the difference between the processing elements

and an array controller. Thus, the examiner is not free to disregard the teachings of

Taylor, which clearly teaches that 14 is an array controller and not a processing

element. For that reason, the rejection under 102(b) should be withdrawn."

Examiner disagrees. The issue of anticipation relies on the invention disclosed,

not the inventor's conceptual view of said invention. Examiner asserts that considering

a controller to be a processing element is a reasonable position. Applicant admits that

the controller is, in fact, an element of the processor. Examiner fails to recognize why

that this element is not considered to be related to "processing". Examiner asserts that

a "processing element" can easily be used to refer to any element within a processor—

including the controller disclosed in Taylor.

4.   Applicant state:

"The equation 1+n/2 does not refer to shift instructions, but rather to cycles for

the algorithm to implement an x-axis reflect on an n-by-n array."

Examiner directs Applicant's attention to col 10 lines 15-17 where it states, "The

second step runs in <u>one cycle</u> and is simply a global shift west." Examiner asserts that

the equation 1+n/2 refers to both cycles and shift instructions.

5.   Applicant states:

"Thus, even if Examiner's position were correct, and the array 14 could be

considered to be a processing element, the array 14 does not maintain a count for at

least certain of the processing elements."

Examiner disagrees. As Applicant stated in the remarks, "it [array controller]

maintains a single count for every element in the array." The controller also uses the

count, so it is considered to maintain the count for itself as well.

6.   Applicant states:

"Claim 1 has been amended to make it clear that the storing is taking place in

each processing element in response to that processing element's count."

Examiner disagrees. See the rejection to claim 1 and the objection to claim 1.

7.   Applicant states:

"That again serves to distinguish the subject matter of independent claims 1, 5, 8,

16, 20, 23, and 26 from Taylor."

Examiner disagrees. Even if the amendment did distinguish the subject matter

from claim 1 from Taylor, Applicant has failed to show how this affects the rejections

made to the remaining independent claims that do not disclose this amendment.

Conclusion

52. The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Bratt et al. (U.S. Patent No. 6,877,020) disclose a matrix of processing elements

performing various shift operations on the data in said elements.

Crozier (U.S. Patent No. 5,081,700) discloses a system for rotating an image by

means of shifting data in an array.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Johnson whose telephone number is (571) 272-2678. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EDDIE CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100